"Tsunagu"Technology New Product News
Fujikura NEWS

Fujikura

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- Launch of Optical Fiber Fusion Splicers 70R, 19R, and 19S
- Development of Eco Wires and Cables with Low Smoke Emission and Excellent Flame Retardancy
- Introduction of a Field-Installable Fusion Optical Connector with Drop Coating Capability (FuseConnect®SC-DC)
- Development of Multi-Layer FPC for High Frequency Transmission Line

Power & Tele-communi-cations

Launch of Optical Fiber Fusion Splicers 70R, 19R, and 19S

With the continuous pursue of quality in optical fiber construction, Fujikura launched new optical fiber fusion splicers—70R, 19R and 19S—achieving "User Friendly, Durability and High Reliability" in July.

Following the launch of the single fiber core alignment fusion splicer 70S in April, the three new models below are now available in the market.

- 70R: 12-Fiber Ribbon Fusion Splicer
- 19R: 4-Fiber Ribbon Fusion Splicer
- 19S: Fixed V-Groove Single Fiber Fusion Splicer

70R

Main features of 70R, 19R, and 19S

Automatic wind-protector and tube heater

- Automated wind-protector and tube heater for reduced splicing steps.
- World' s fastest splicing time and heating cycle time result in quicker operations.

Innovative carrying case design

- Smart tool arrangement that enables swift deployment upon opening the case with an integrated detachable working table.

Built-in instruction manual

- Built-in images and videos for basic operation and trouble-shooting guidance.

Enhancement of shock-absorption, drip-proof, and dust-proof structures

- Enhanced drip-proof, dust-proof structure and omnidirectional drop impact resistance, providing the unit protection against the environment.

Increased electrode life and splice cycles with battery

- Electrode lifespan is increased to 2000 Arc discharges, which is double to conventional splicer. The new batteries also boost 1.5 times efficiency to 140 splice cycles (19R) for extra productivity.

■ Product specifications

Model	70R、70S、19R、19S
Size	46(W)×159(D)×150(H) [mm]
Weight	2.5kg (including battery)
Sales price	Open
Annual planned unit sales	30,000 units domestically and internationally for all models of 70-series

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Power & Tele-communi-cations

Development of Eco Wires and Cables with Low Smoke Emission and Excellent Flame Retardancy

Fujikura has developed eco wires and cables that have achieved both high flame retardancy and lightened environmental load at the same time.

Since the wires and cables are used in our everyday surroundings, high flame retardancy is desirable in terms of disaster prevention. In particular, the wires and cables used in buildings, underground establishments, and enclosed spaces such as in a vehicle must possess excellent flame retardancy. Meantime, demand for high environmental safety is increasing in the face of heightened effort to reduce risks of chemical damage to the environment and to the human body as outlined in measures such as REACH and RoHS.

To achieve high flame retardancy, retardants are added to the wire and cable sheath. Halogen-based flame retardants possess high retardancy. In terms of environmental and safety aspects, however, there is a risk of generating hazardous substances when combusted and/or a risk of interfering with visibility in the event of a disaster, due to the black smoke generated. On the otherhand, it is speculated that phosphorus-based flame retardants may disturb the environmental hormone balance.

In search of the solutions to these issues, we have been working on cables with metal hydrate flame retardants. However, a large quantity of the retardants had to be added to achieve the high flame retardancy. Because the mechanical strength (scratch and tear resistances) is reduced by addition of a large quantity of flame retardants, obtaining high mechanical strength and flame retardancy simultaneously has been a challenge.

Fujikura has developed a technology to effectively stop combustion by strengthening the shell formed on the surface of the sheath upon combustion (a basic patent granted). With this technology, we were able to reduce the amount of flame retardants added to the sheath, thus achieving both high flame retardancy and mechanical strength. In addition, the shell contributes to low smoke emission by suppressing the generation of gases. The product is lighter due to the smaller specific gravity of the sheath.

Fujikura will contribute to the disaster prevention and environmental load reduction by introducing these new eco wires and cables to buildings, residential houses, tunnels, underground establishments, automobiles, trains, planes, and ships.

Features

- No environmental load substances contained.
- The vertical flame test passed with high level of flame retardancy.
- No hazardous gases are generated upon combustion.
- Low smoke emission
- High mechanical strength (scratch resistance and tear resistance)

Environment and Energy Laboratory E-mail:askmtl@fujikura.co.jp

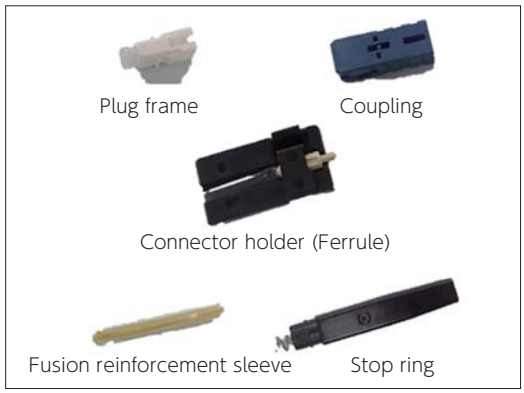
Power & Tele-communi-cations

Introduction of a Field-Installable Fusion Optical Connector with Drop Coating Capability (FuseConnect®SC-DC)

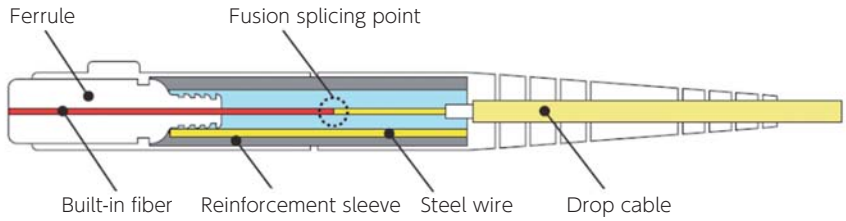
In addition to our field-installable fusion optical connector, which is well-received in the market, a drop-coating model has been added to our product line. With this product, an SC connector can be attached directly to a drop cable by fusion splicing. Our fusion splicer enables easy assembly with our exclusive holder. Until now, mechanical splicing was the only option for a field-installable optical connector with drop coating capabilities. With the introduction of a connector that employs fusion splicing, we can expect a broader applicability, as it allows assembly with highly reliable quality of fusion.

Appearance of FuseConnect®SC-DC after Assembly (UPC polish type)

Product Configuration of FuseConnect®SC-DC



Structure Outline of FuseConnect®SC-DC



Assembly Procedures of FuseConnect®SC-DC

Pretreatment of the optical fiber → Fusion splicing → Heating reinforcement → Housing assembly → Complete

Product Specifications

Model Number	FuseConnect®SC-DC	
Item	UPC polish type	APC polish type
Connector type	SC (Blue)	SC (Green)
Applicable optical fiber	SM (Single mode)	
Operation cable	Drop cable[1], indoor cable (standard dimension: 2.0×3.1), low friction indoor cable (standard dimension: 1.6×2.0)	
Connector loss (with master)	0.4dB or less	
Return loss (SM only)	50dB or more	60dB or more
Fiber retention force	20N or less	

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Electronics & Business

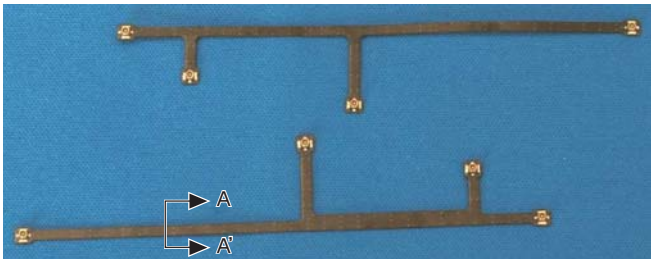
Development of Multi-Layer FPC for High Frequency Transmission Line

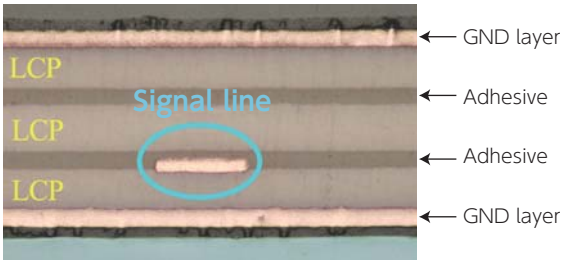
Mobile equipment, including smart phones, laptop computers, tablet devices, and cell phones, are becoming smaller and more functional. As such, FPCs, which are frequently used in these devices, have been increasingly required to possess high-frequency performance such as low transmission loss for high-frequency transmission line.

Fujikura has developed a multi-layer FPC for high-frequency transmission line that has achieved reduced transmission loss by using CCL (Copper Clad Laminate) and an adhesive with low dielectric constant and dielectric loss tangent, and by executing high-precision impedance control. In addition, the new FPC can be used in a limited space with the implementation of a micro coaxial connector.

In order to accommodate clients' requests, we offer, for example, material selection at the design stage and optimum design by using simulations.

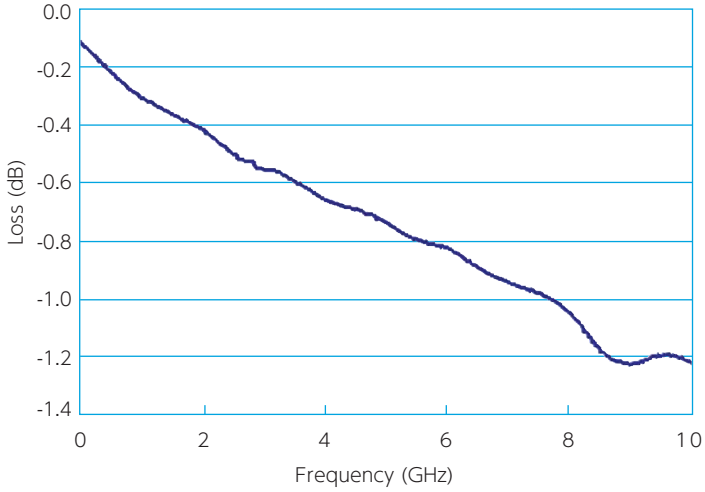
Developed Product (An example of a multi-layer FPC for high-frequency transmission line)





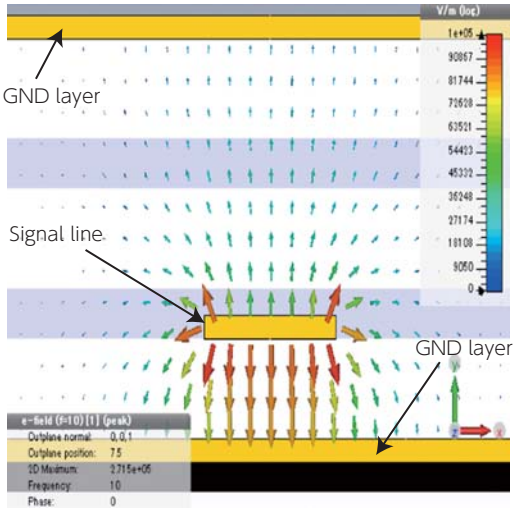
A-A' cross-section

Transmission Loss (Measured values) *Not guaranteed figures.



Transmission distance: 50mm Characteristic impedance: 50Ω

An Example of Simulation



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